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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/518,077	12/16/2004	Tomoya Yamamoto	25613-000006/US	3427
30593	7590	09/25/2006	EXAMINER	
HARNES, DICKEY & PIERCE, P.L.C.			SHAH, MANISH S	
P.O. BOX 8910			ART UNIT	
RESTON, VA 20195			PAPER NUMBER	

2853

DATE MAILED: 09/25/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/518,077

Applicant(s)

YAMAMOTO ET AL.

Examiner

Manish S. Shah

Art Unit

2853

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1 and 4-12 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1 and 4-12 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date 12/16/04; 4/29/05.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_.

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 1, 4-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Soga et al. (# US 2002/0049261) in view of The society of Polymer Science Japan, Asakura Shoten (1988) (page: 212-213) and Doi et al. (# US 6378999).

Soga et al. discloses:

- An inkjet recording ink composed of a high-molecular dispersant, a water-insoluble colorant, a water-soluble organic solvent and water (see Examples; [0036]-[0037]), characterized in that said water-insoluble colorant is at least one colorant selected from the group consisting of C.I. Solvent Yellow 21, C.I. Solvent Yellow 42, C.I. Solvent Yellow 79, C.I. Solvent Yellow 82, C.I. Solvent Yellow 83: 1, C.I. Solvent Yellow 88 and C.I. Solvent Yellow 151, at least one colorant selected from the group consisting of C.I. Solvent Red 8, C.I. Solvent Red 49, C.I. Solvent Red 83:1, C.I. Solvent Red 91, C.I. Solvent Red 127 and C.I. Solvent Red 218, at least one colorant selected from the group consisting of C.I. Solvent Black 3, C.I. Solvent Black 27, C.I. Solvent Black 29 and C.I. Solvent Black 45, or at least one colorant selected from the group consisting of C.I. Solvent Blue 25, C.I. Solvent Blue 38, C.I. Solvent Blue 44,

C.I. Solvent Blue 67 and C.I. Solvent Blue 70 ([0047]); and said high-molecular dispersant is a block copolymer comprising at least one hydrophobic block and at least one hydrophilic block, and said at least one hydrophobic block and at least one hydrophilic block have been obtained by polymerizing vinyl ethers as monomers, respectively ([0038]-[0046]; figure: 7-9).

- The hydrophilic block in said high-molecular dispersant is formed of at least two blocks consisting of a block formed of a nonionic vinyl ether and a block formed of an anionic vinyl ether, wherein said high-molecular dispersant comprises at least three block consisting of a block formed of one of hydrophobic vinyl ethers, a block formed of one of nonionic hydrophilic vinyl ethers and a block formed of one of anionic hydrophilic vinyl ethers ([0045]-[0046], figure: 7-9).

- The inkjet recording method, which is conducted by applying energy to an ink to cause said ink to fly onto a recording medium, wherein said energy is thermal energy (figure: 1, see Examples).

- The recording medium has an ink-receiving coating layer on at least one of opposite sides thereof (see Examples).

- The inkjet recording system provided with an ink cartridge, which is provided with an ink reservoir with an ink stored therein, and also with a recording head portion for ejecting said ink (figure: 1).

- The block copolymer has a number average molecular weight of from 500 to 20,000,000, which is constant to material (figure: 7-9, see Examples).

Soga differs from claim of the present invention is that at one hydrophilic block in high molecular dispersant is formed of an anionic vinyl ether. (2) The particles of the water insoluble colorant dispersed by said high molecular dispersant have an average particle size not greater than 80 nm.

The Society of Polymer Science Japan, New edition polymer Dictionary, First edition, Asakura Shoten 1988, teaches that to making hydrophilic block, hydrophilic group in hydrophilic block copolymer, anion radical such as carboxyl group is an equivalent to nonionic hydroxyl group (page 212-213).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the ink composition of Soga et al. by the aforementioned teaching of Asakura Shoten 1988 in order to make the hydrophilic block, which gives high quality printed image.

Doi et al. teaches that to prevent the nozzle from clogging, ink composition had particles of the water insoluble colorant dispersed by said high molecular dispersant have an average particle size from 20 to 80 nm (column: 15, line: 18-30) and the block copolymer has a number average molecular weight of from 3000 to 20,000 (column: 8, line: 10-25).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the ink composition of Soga et al. by the aforementioned teaching of Doi et al. in order to prevent the nozzle from clogging, which gives, which gives high quality printed image.


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***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Manish S. Shah whose telephone number is (571) 272-2152. The examiner can normally be reached on 8:00am-4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen D. Meier can be reached on (571) 272-2149. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

  
Manish S. Shah  
Primary Examiner  
Art Unit 2853

MSS

9/15/06